



US009573890B2

(12) **United States Patent**
Hu(10) **Patent No.:** **US 9,573,890 B2**(45) **Date of Patent:** ***Feb. 21, 2017**(54) **PROCESS FOR PRODUCING TAURINE**(56) **References Cited**(71) Applicant: **VITAWORKS IP, LLC**, North Brunswick, NJ (US)

U.S. PATENT DOCUMENTS

(72) Inventor: **Songzhou Hu**, Princeton, NJ (US)1,932,907 A * 10/1933 Nicodemus C07C 309/14
562/102
1,999,614 A * 4/1935 Ossenbeck C07C 309/14
562/104(73) Assignee: **Vitaworks IP, LLC**, North Brunswick, NJ (US)2,820,818 A 1/1958 Sexton
8,609,890 B1 12/2013 Hu
2014/0121405 A1* 5/2014 Chen C07C 303/18
562/104
2015/0210633 A1 7/2015 Hu

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

FOREIGN PATENT DOCUMENTS

This patent is subject to a terminal disclaimer.

CN 101486669 A 7/2009
CN 101508657 A 8/2009
CN 101508658 A 8/2009
CN 101508659 A 8/2009
DE 219023 A3 2/1985
WO 0177071 A1 10/2001(21) Appl. No.: **15/228,539**(22) Filed: **Aug. 4, 2016**

OTHER PUBLICATIONS

(65) **Prior Publication Data**

US 2016/0340300 A1 Nov. 24, 2016

Abstract of CN101508657.*

Abstract of CN101508658.*

Abstract CN 101508659.*

Abstract of CN 101486669.*

International Search Report for corresponding International Application No. PCT/CN2015/000232, mailed Jul. 1, 2015.

USPTO Non-Final Office Action for corresponding U.S. Appl. No. 15/228,568 dated Oct. 5, 2016.

USPTO Non-Final Office Action for corresponding U.S. Appl. No. 14/120,651 dated Mar. 15, 2016.

Related U.S. Application Data

(63) Continuation-in-part of application No. 14/120,651, filed on Jun. 12, 2014, now Pat. No. 9,428,451, which is a continuation-in-part of application No. 14/120,046, filed on Apr. 18, 2014, now Pat. No. 9,428,450.

* cited by examiner

Primary Examiner — Karl J Puttlitz(74) *Attorney, Agent, or Firm* — Graham Curtin, P.A.(51) **Int. Cl.****C07C 303/32** (2006.01)**C07C 303/02** (2006.01)**C07C 303/44** (2006.01)(57) **ABSTRACT**(52) **U.S. Cl.**CPC **C07C 303/32** (2013.01); **C07C 303/02** (2013.01); **C07C 303/44** (2013.01)

There is disclosed a process for producing taurine by the ammonolysis of alkali isethionate in the presence of alkali ditaurinate or alkali tritaurinate, or their mixture, to inhibit the formation of byproducts and to continuously convert the byproducts of the ammonolysis reaction to alkali taurinate. The production yield is increased to from 90% to nearly quantitative. The ammonolysis reaction is catalyzed by alkali salts of hydroxide, sulfate, sulfite, phosphate, or carbonate.

(58) **Field of Classification Search**

None

See application file for complete search history.

10 Claims, No Drawings